State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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July 21, 1994

Michael Lee Pagel
Chief Engineer
Barneys Canyon Mine
P.O. Box 311
Bingham Canyon, Utah 84006-0311

Re: Review of Melco Expansion Project Revision, Kennecott Corporation Barneys Canyon Mine, M/035/009, Salt Lake County, Utah

Dear Mr. Pagel:

The Division has completed its review of the various submittals of supplemental information which you have provided for the Melco Expansion Project. Specifically, a copy of the Barneys Canyon Mine - Waste Rock Management Plan, received June 2, 1994; a letter received June 15, 1994 in response to the Division's May 24, 1994 review letter; and the June 29, 1994, updated draft NOI revised text with redlined changes, revised plates, and clean copies for insertion into the plan binders. Kennecott has satisfied the majority of our review comments with these latest submissions. However, before we can proceed with issuance of our tentative approval and begin the 30-day public comment period, a few remaining issues need to be resolved/clarified.

Our comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar manner. Upon our receipt of a satisfactory response to these remaining comments, we will proceed with issuance of tentative approval and publish the appropriate 30-day public notice.

R647-4-105 Maps, Drawings & Photographs

105.2 Drawings or Cross Sections (slopes, roads, pads, etc.)

The latest revised expansion of the Barneys Canyon Project includes development of the new North Access Road from the Melco Pit. The revised plan does not include any general/typical cross-sections of this new road. What will be the average width and overall length of this road. Please select at least 2 areas along the proposed route

of the new road and provide typical cross-sections, showing road width, cut and fill dimensions, drainage ditch design, berms/guard rails, etc. Also show the approximate locations on Plate II-C from which these road cross-sections were generated.

R647-4-107 Operation Practices

107.3 Erosion & sediment control

On pages 35-36 (Section 3.10.2 & .3), of your 6/29/94 response, the proposed erosion and sediment control plans are described for the North Access Road. On page 36, a verbal description is provided indicating that road drainage will be directed to a large ditch on the inside of the road. Please provide a typical cross-section showing the proposed design and sizing specifications for this ditch (or provide reference to original approved plan where this information can be found).

Note: The 11/19/93 consolidated plan may also need to be revised to show or reference the road ditch hydrologic design/sizing criteria.

Sediment basins and culverts are also proposed on page 36 as additional sediment control measures for the new North Access Road. Please describe, or reference in the approved plan, the basic design of the drainage ditch sediment basins. On Plate II-C, please show the proposed locations for these structures, the culvert (include pipe diameter) and erosion control mat locations.

Note: Plate III-A, Facilities Layout and Operational Surface Water Runoff, from the 11/19/93 consolidated plan, should also be revised to include the location of the new North Access Road and these drainage control features. Appendix D-II (11/19/93 consolidated plan), Barneys Canyon Culvert Design table, may also need to be updated to include the new culverts to be installed along the North Access Road. Page 64, (11/19/93 plan), Table 3.10-1 Curve Numbers for Barneys Canyon Drainage Basins, may also need to be revised to reflect changes made in this latest plan revision/expansion(?).

On page 36, the text describes the possible construction of a large sediment basin upgradient from where the existing Melco Haul Road crosses the lower Barneys Canyon drainage. Plate II-C shows a new topsoil stockpile apparently located in the same general vicinity as described in the text for the sediment basin (basin location not shown on Plate). A potential conflict may arise, if both are proposed for the same location. Please clarify the locations or correct this potential conflict.

We do have a general concern with the proposed location for the above referenced topsoil stockpile. As drawn on Plate II-C, it appears that it will be situated in the bottom of the Barneys Canyon drainage. A drainage bottom is usually not the best place to locate a topsoil stockpile due to the increased probability of erosional impacts. It is our recommendation that the stockpile be relocated out of the drainage profile to a higher elevation thereby minimizing topsoil losses due to water erosion.

R647-4-113 Surety

The surety section in the June 15, 1994 letter proposes a reclamation bond in the amount of **4.5** million dollars ($4,492,899 rounded). This figure is based on **1,061.9 acres** of disturbance multiplied by $4,231 per acre (1999-$). The reclamation cost estimate section in the updated draft NOI revision text proposes a reclamation bond of **4.6** million dollars ($4,535,209 rounded up) based on **1,071.9 acres** of disturbance at $4,231 per acre. The acreage difference between these two figures is 10 new acres of clay pit areas to be used during construction of new heap leach pads. A revised surety amount of $4,535,000 would satisfy the Division's bonding requirements; however, $4.6 million would also be acceptable. Please select one proposed surety amount. (AAG)

General Comments:

The Waste Rock Management Plan describes the conceptualized design plans for dump construction. One conceptual design cross section, Figure 1, Components of Dump Drainage, is provided in the plan. Under Section 4.2 and 4.3, verbal descriptions of the 'Oxide' and 'Sulfide' waste dump reclamation designs are provided. Please provide a conceptualized cross-section(s) of the sulfide dump design plans for the Melco South Sulfide dump and the NBCS pit backfill.

It is difficult to determine from the text, how (and where) the sulfide waste rock will be placed while the overall dump is being constructed. Will the sulfide waste rock be temporarily stockpiled and later moved to the final sulfide dump "repository" locations, or will it be immediately placed in the respective dump locations? How long will the sulfide bearing wastes be exposed to oxidation processes before they are ultimately covered/sealed? Please describe any interim protection measures proposed to minimize the potential for sulfide oxidation and acid or sulfate generation prior to final closure of these dumps?

Conceptual monitoring (lysimeters) and treatment plans for potential acid runoff (eg. pit walls) are proposed with finalized plans forthcoming at a future date. The Division agrees with the conceptual plans as outlined in this proposal. We will await

future plans/revisions as they are developed. The State Division of Water Quality (DWQ) may require modifications to this proposal to demonstrate compliance with their Ground Water regulations. We would appreciate the opportunity to review any significant changes to this waste rock management plan that DWQ may require, before it is finalized and ultimately approved.

Your June 13, 1994 letter indicates that following issuance of our tentative approval decision, Kennecott will seek permission to begin road access construction, tree clearing, vegetation grubbing and topsoil removal activities. The decision to allow these preliminary development activities to occur will be an administrative call. Kennecott's posting of the revised Reclamation Contract (FORM MR-RC) and the amended surety amount will be of critical concern in the decision making process.

Thank you for your continued cooperation, time and patience in helping us complete this permitting action.

Sincerely,

Anthony D. Gallegos
for

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
cc: Kiran Bhayani, DWQ
Lowell Braxton, DOGM
Minerals file
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